

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021327**Date Inspected:** 02-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Fred Von Hoff		
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>

<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>

**Bridge No:** 34-0006**Component:** OBG Section**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager was on site between the times noted above.

This QA Inspector observed ABF welding personnel performing production welding on the South Grillage Tower leg.

This QA Inspector was informed by QC Inspector Fred Von Hoff at approximately 0700 hours the root pass of two of the Complete Joint Penetration (CJP) welds had been visually inspected and Magnetic Particle Tested (MT) and cracks were observed at weld joints TGS P1-P2 and TGS P1-P5. This QA Inspector performed a visual verification and observed the following: (see typical photos below)

Weld Joint: TGS P1-P5: a crack was observed approximately the full length of the weld joint, 790 mm.

Weld Joint: TGS P1-P2: a crack was observed approximately 250 mm from the end of the weld joint (opposite the skin plate) and had a length of approximately 200 mm.

This QA Inspector observed Shielded Metal Arc Welding (SMAW) was in process on the Partial Joint Penetration (PJP) welds along the perimeter of the outer skin plates and internal grillage plates. QC Inspector Fred Von Hoff stated he had informed QC Manager Jim Bowers of the cracked welds and was informed by QCM Jim Bowers that

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no further weld/work was to be performed on the two weld joints with cracks, but to continue with production welding the PJP weld joints.

This QA Inspector was informed by QC Inspector Fred Von Hoff the welding parameters were within the required heat input range in the Welding Procedure Specifications (WPS) ABF-WPS-D15-1162-4 for the PJP welds. This QA Inspector randomly observed the amperage's and voltages of ABF welding personnel Rick Clayborne (#2733), Richard Garcia (#5892) and Gilbert Peralta (#9453) were within the ranges in the WPS. This QA Inspector observed that both 3.2 mm and 4.0 mm diameter E9018H4R electrodes were being used and stored in separate heated storage containers. This QA Inspector also observed the 1-hour exposure limit for the electrodes appeared to be monitored and adhered to.

Later this date at approximately 1330 hours this QA Inspector performed a visual verification of the cracks previously noted and observed the width of both cracks had increased and that at TGS P1-P2 the length of the crack was now approximately 495 mm in length. At weld joint TGS P1-P5 the crack was previously noted as being full length. The growth in width and/or length was presumed to be due continued welding of the PJP weld joints.

Later this QA Inspector observed welding appeared to have been completed on the PJP joints, except at the tie in areas of the CJP welds and a short area approximately 100 mm long at the intersection of skin plates B and C. QC Inspector Fred Von Hoff was aware of the status of welding.

This QA Inspector had previously received Weekly Welding Report submittal; ABF-Sub-001536 Rev-41. This QA Inspector performed a review of the documents to determine compliance with the Welding Quality Control Plan (WQCP) submitted by the contractor, compliance with the applicable contract requirements and to determine if any Quality Control (QC) documents were missing. This QA Inspector documented the findings on a weld specific tracking log and informed QA Inspector Bill Levell of the findings. This QA Inspector placed the reviewed documents in the applicable files.

Transportation Engineer Bob Bignano informed this QA that high strength fasteners from LeJeune Bolt Company, loads #126 and #128, had arrived by truck at Pier #7 and requested that METS samples be taken. This QA Inspector met with Transportation Engineer Bob Bignano at Pier #7 and randomly selected the applicable samples (bolts, nuts and washers), reviewed the Rotational Capacity (rocap) test report, Mill Test Report (MTR) and finishing Certificate Of Compliance (COC) for each applicable bolt, nut and washer lot/heat. The high strength fasteners were placed in a plastic bag identifying the rocap number, type of bolt, number of samples and this QA Inspectors' applicable lot number for the samples. Transportation Engineer Bob Bignano informed this QA Inspector additional fasteners were due to arrive the next day and that these samples did not need to be taken to the Translab in Sacramento, CA until later this week, indicating the additional bolt samples could be taken with these samples.

### **Summary of Conversations:**

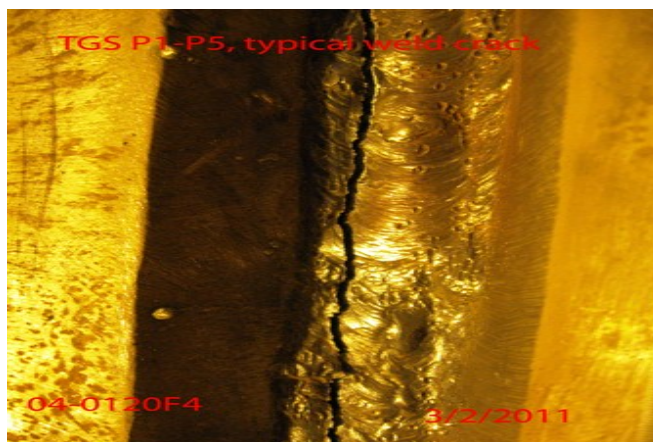
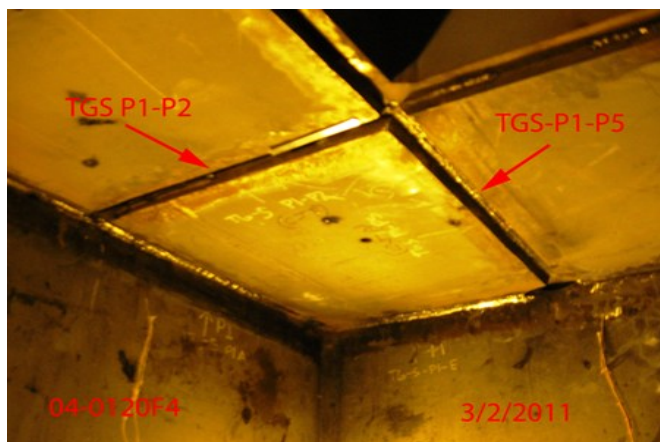
This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above there were no notable conversations.

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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Hager,Craig
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Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill
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QA Reviewer
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